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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,533	12/30/2004	Markus Oles	263593US0XPCT	9525

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EXAMINER	
WALTERS JR, ROBERT S	

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
05/20/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/518,533	OLES ET AL.	
	Examiner	Art Unit	
	ROBERT S. WALTERS JR	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-27 and 30-38* is/are pending in the application.

4a) Of the above claim(s) *14-24,36 and 37* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-27,30-35 and 38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claims 1-13, 28 and 29 are cancelled. Claims 14-27 and 30-38 are pending. Claims 14-24, 36 and 37 are withdrawn. Claims 25-27, 30-35 and 38 are presented for examination.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/13/2009 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 25-27, 30-35 and 38 as amended have been considered but are moot in view of the new ground(s) of rejection.

Applicant further argues that the range from 0.01-1% is supported in the specification. The examiner disagrees with this contention. As noted the narrowest range described in the disclosure is from 0.1-2.5%, and the disclosure only provides one specific example within this genus, that example being 1%. This example does not however provide support for a narrower range with this value as the upper limit of that range. It should be noted that a subgenus is not necessarily supported by a genus encompassing it and a species upon which it reads (see *In re*

Smith, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972), and a subgenus range is not necessarily supported by a generic disclosure and a specific example within the subgenus range (see *In re Lukach,* 442 F.2d 967, 169 USPQ 795 (CCPA 1971).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 25-27, 30-35 and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of a range from 0.01-1% does not have support in the specification. The most narrow range presented in the specification is 0.1-2.5%, which is encompassed in the broader ranges presented in the specification of 0.5-5% and 0.01 to 10%. Furthermore, the examples also do not support this lower, narrow range, as all the examples presented have 1% by weight of the nanoparticles. As no examples are presented below 1%, the examples therefore can not provide support for this lower, narrow limitation, though they would provide support for the suspensions comprising 1% by weight of nanoparticles.

2. Claims 25-27, 30-35 and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The new limitation that the nanostructured particle has an average diameter of from 30 to 100 microns is not supported in the specification or original claims as filed. The disclosure and original claims provide support for a range from 0.01 to 100 microns or 0.05 to 30 microns. This disclosure does not provide support for a range with 30 microns being the lower limit to 100 microns. Furthermore, the specification actually makes it clear that while the particles can have a broad range up to 100 microns that a range from 0.02 to 50 microns is preferred, and a range from 0.05 to 30 microns is very particularly preferred (see Applicant's specification at page 8, lines 15-20). Therefore, one skilled in the art at the time of the invention would not have considered that this provides support for a range with a lower limit of 30 microns to an upper limit of 100 microns.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 25-27, 30-35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekutowski et al. (U.S. Pat. No. 6156327).

I. Regarding claims 25-27, 30-34 and 38, Sekutowski teaches an aqueous surfactant-free suspension comprising an organic solvent, water, and a hydrophobic (column 4, lines 41-42), nanostructured particle, wherein the suspension comprises at least 50.01% by weight of water (column 8, line 64-column 9, line 1 and the hydrophobic particles consist of TRANSLINK 77, talc, and other particles with hydrophobicity imparted by a treatment, see Table III). Sekutowski teaches preparing this solution by suspending the nanostructure particles in an organic solvent miscible with water and having a boiling point less than 150 °C, and then mixing this with surfactant-free water to form the suspension (see column 12, lines 31-34). It should be noted that the term nanostructured particle is a broad term and would encompass any ridge or indentation in

the nanoscale range on a particle and does not limit the claim to structures having a defined nanoscale texture on the surface of the particle. Sekutowski teaches that the particles that are preferably used are about 1 micron or less, and these particles, being minerals or treated minerals, would inherently not have a perfectly flat texture and would have imperfections that would correspond to ridges and indentations on the nanoscale range (corresponding to an irregular surface nanostructure with features in the range of 10 to 100 nm), thus reading on the claimed term of nanostructured particle and claim 34. Further, it should be noted that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, as in this case, the claim is unpatentable even though the prior product was made by a different process.

Sekutowski further teaches the suspension having 0.1 to 49.9% by weight of methanol (column 12, lines 31-34) and at least 60% water (column 12, lines 31-34). Sekutowski teaches the particles are preferably about 1 micron (column 4, lines 21-25), and may be minerals (column 3, lines 15-19) and may have hydrophobic properties obtained by treatment with an alkyl silane (see Table II, column 6). Sekutowski also teaches the use of solvents other than methanol, such as acetone (column 7, lines 54-67) as well as teaching that the solution only consists of water, the nanoparticles and the organic solvent (see Treatment 3 of Example 5, column 12, lines 31-34).

Sekutowski teaches the particles being present in about 1.5% by weight of the suspension, however fails to teach the particle present in 0.01 to 1% by weight, and also fails to

teach the particles having an average diameter of from 30 to 100 microns. First, as described above, it would have been obvious to one of ordinary skill in the art at the time of the invention that adjusting the range from approximately 1.5% to the presently claimed range would not have changed the properties of the suspension in a significant manner. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sekutowski by having the particles present in the claimed range. Furthermore, one of ordinary skill in the art at the time of the invention could have modified Sekutowski to use the presently claimed amount of particles with a reasonable expectation of success (as it would be expected, given the arguments presented above, that this suspension would act similarly to the suspension having approximately 1.5% particles) and the predictable result of providing a surfactant-free suspension. Second, it would have been obvious to one of ordinary skill in the art at the time of the invention that the average diameter of the particles would affect the resultant coating quality and surface coverage of a coating prepared from the solution. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed range for the average particle diameter through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

II. Regarding claim 35, Sekutowski teaches all the limitations of claim 25, but fails to explicitly teach that the particles are not agglomerated. However, Sekutowski does teach that the particles should be finely divided and that most of the particles are dispersed to a small particle

size (column 8, lines 11-13). Therefore, based on this teaching, it would be obvious to one of ordinary skill in the art at the time of the invention to modify Sekutowski by ensuring that the particles are not agglomerated. One would have been motivated to make this modification as Sekutowski actually teaches the benefits of the particles being finely divided (column 3, lines 11-14 and column 4, lines 1-20).

Conclusion

Claims 14-27 and 30-38 are pending.

Claims 14-24, 36 and 37 are withdrawn.

Claims 25-27, 30-35 and 38 are rejected.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Friday, 8:00am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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/Michael Barr/
Supervisory Patent Examiner, Art Unit 1792

/ROBERT S. WALTERS JR/
May 15, 2009
Examiner, Art Unit 1792